4 INPUTS STANDALONE DIGITAL VIDEO RECORDER
ART. 49163

Please read this manual thoroughly before use
and keep it for future reference.

INVENTING INNOVATION

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WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER(OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Explanation of graphical symbols

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to person.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The user is obliged to inform himself and to conform himself to the national and local rules concerning the monitoring and the audio and video recording. Nobody else will consequently be held responsible for an improper use of this system which could break the laws in force.

FCC INFORMATIONS: THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE IN A RESIDENTIAL INSTALLATION. THIS EQUIPMENT GENERATES, USE AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT ISTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTIONS, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. HOWEVER, THERE IS NO GUARANTEE THAT INTERFERENCE WILL NOT OCCUR IN A PARTICULAR INSTALLATION. IF THIS EQUIPMENT DOES CAUSE HARMFUL INTERFERENCE TO RADIO OR TELEVISION RECEPTION, THE USER IS ENCOURAGED TO CORRECT THE INTERFERENCE TO OWN EXPENSES.

CAUTION: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL DEVICE COMPLIES WITH CANADIAN RULES.

CE COMPLIANCE STATEMENT

WARNING:

THIS IS A CLASS A DIGITAL DEVICE. IN A DOMESTIC ENVIRONMENT THIS PRODUCT MAY CAUSE RADIO INTERFERENCE, IN WHICH CASE THE USER MAY BE REQUIRED TO TAKE ADEQUATE MEASURES.

1. **READ AND KEEP THESE INSTRUCTIONS**
   Please read this manual thoroughly before use and keep it for future reference.

2. **CLEANING**
   Unplug this equipment from the wall outlet before cleaning it. Use a mild household detergent, never use strong solvent. Clean the unit with a slightly damp soft cloth.

3. **ATTACHMENTS**
   Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

4. **WATER AND/OR MOISTURE**
   Do not use this equipment near water or in contact with water.

5. **ACCESSORIES**
   Do not place this equipment on an instable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions and shoul use a mounting kit approved by the manufacturer. This equipment and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the equipment and cart combination to overturn.

6. **VENTILATION**
   If existing, the openings or ventilation grills of the device have been planned with the scope to supply ventilation to the apparatus, to assure a reliable operation of the same and to protect it from overheating. Do not block or cover these openings.

7. **POWER SOURCES**
   This equipment should be operate only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company. Warning if this equipment works with battery, risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the local law.

8. **GROUNDING**
   Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider that the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

9. **POWER AND CONNECTION CABLES PROTECTION**
   Protect the cables from being walked on or pinched particularly at plugs and the point where thy exit from the equipment.

10. **LIGHTNING STORM**
    For added protection for this equipment during a lightning storm or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power line surges.

11. **OVERLOADING**
    Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

12. **SERVICING**
    Do not attempt to repair this equipment yourself. The opening and the movement of the covers could you expose at high voltage or other dangers. Refer all servicing to qualified service personnel.

13. **DAMAGE REQUIRING SERVICE**
    Unplug this equipment from the wall outlet and refer servicing to qualified personnel under the following conditions:
    a. If the power supply cord or the plug has been damaged.
    b. If liquid is spilled or objects have fallen into the equipment.
    c. If the equipment has been exposed to rain or water.
    d. If the equipment does not operate normally by following the operating instructions. Adjust only those controls that are covered by operating instructions. An improper adjustment of other controls may result in damage.
    e. If the equipment has been dropped or the case damaged.
    f. If the equipment exhibits a distinct change in performance.

14. **REPLACEMENT PARTS**
    When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may results in fire, electric shock or other hazards.

15. **SAFETY CHECK**
    Upon completation of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

16. **INSTALLATION IN PUBLIC PLACES**
    This kind of installation would have to be made by specialized personnel and to be in compliance with the local laws.

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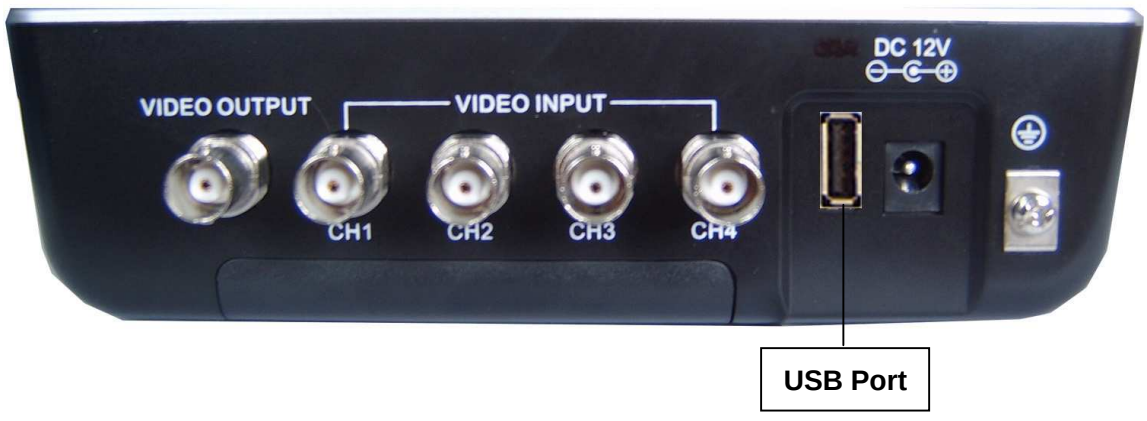
1. DVR Feature

- 4 Channel BNC camera input.
- 1 Channel BNC monitor output.
- NTSC / PAL optional.
- Video loss prompt.
- Motion detection with area setting.
- Connect PC with USB 2.0 Port.
- One ATA-100 Hard Disk interface, support over 80Gbyte (2.5 inch).
- Time Schedule record / Motion Triggered record.
- IR Remote Controller.

2. Outlook

2.1 Front Panel

2.2 Rear Panel



2.3 Remote Controller

1.CH1	Select or enlarge CH1
2.CH2	Select or enlarge CH2
3.CH3	Select or enlarge CH3
4.CH4	Select or enlarge CH4
5.QUAD	Quad View
6. REW	Rewind
7.PLAY	Playback
8.FWD	Forward
9.RECORD	Record (increase value)
10.PAUSE	Pause
11.STOP	Stop recording or playing (reduce value)
12.MENU	Enter or exit setup menu
13. Select/Edit	Modify item
14. UP	Move up
15.DOWN	Move down

3. DVR Installation

3.1 Hard Disk installation

Connect power data cable to Hard Disk Drive.

NOTE: Hard Disk must be set as MASTER!

CAUTION
Do not open the cover when DVR running!

3.2 Camera and Monitor connections

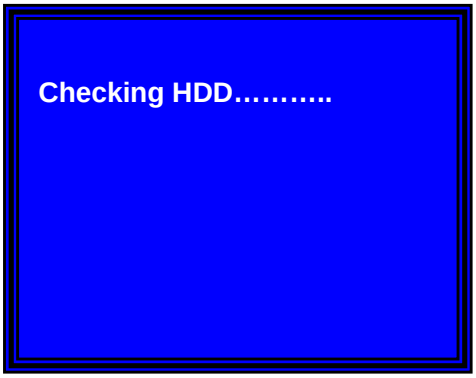
There are 4 camera video input and 1 monitor video output with BNC connector.

3.3 Power Cord connection

Please use the power adapter supplied with DVR.

4. DVR Initialization

4.1 Detect Installed Hard Disk



After connecting the power, system will detect installed hard disk.

Please make reference to hard disk manual to configure it as **MASTER**.

4.2 Restore Recording Process

When power-error happen during recording process, system will automatically restore recording process after power Re-connected. When “hard disk fail” happens during recording process, system will start-up automatically to restore recording process once again.

4.3 Main Screen

At start DVR verify the video inputs and . show the four cameras on the monitor.

Upper left → ratio of HDD used.

Middle → channel name (CH1～CH4).

Bottom right → date and time.

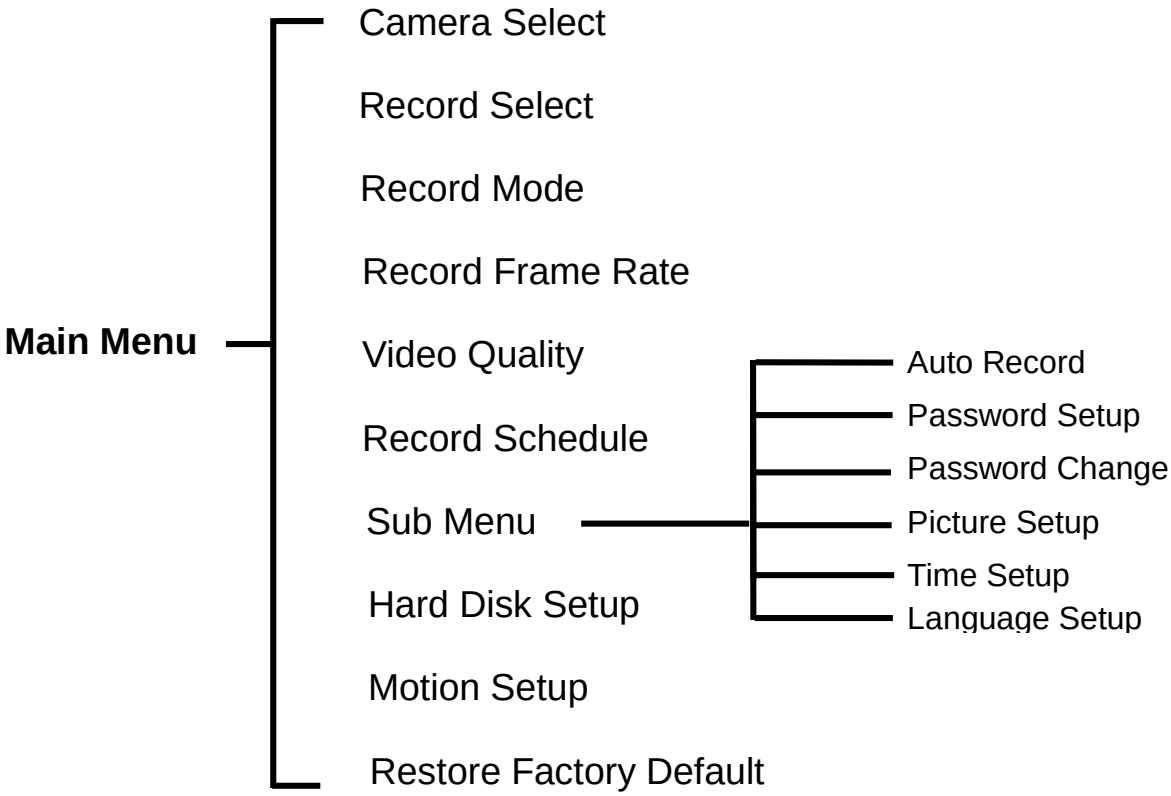
DVR is waiting for key function, press“ Menu” on DVR to start setup process.

5. DVR Setup

5.1 Main Menu

Press “ Menu”, into setup menu use “ Up” and “ Down” to select item, press “ Sel” to modify settings and “ Menu” to confirm and exit.

Menu Directory



5.2 Camera Select

DVR system can display 4 cameras and video in one picture (Quad Mode). User can configure which camera to display.
Press "↵ ***Sel***" to modify setting and press "***CH1***", "***CH2***", "***CH3***","***CH4***" to set each channel separately. If no channel is ON, system will display "***OFF***" on monitor.

5.3 Record Select

Configure which channel is allowed to record.

5.4 Record Mode

There are two modes for video recording:

Each Mode： Compress and record each video channel separately, therefore user can enlarge single channel video to full screen display. Moreover, for example, user can turn off record function of CH1 and CH2 and then the system record CH3 and CH4 video only. Press **“*CH1*”, “*CH2*”, “*CH3*”, “*CH4* ”** to switch channel to display when in playback mode. When system is in watching mode or recording mode, press “***QUAD***” button over 3 seconds to make each channel video enlarge to full screen and then display in quad mode in sequence again and again, DVR will not change its state until user press any key.

Quad Mode： Compress and record all 4channel video into one file, therefore user can not enlarge single channel to full screen. User can’t use the each mode record in this mode.

5.5 Record Frame Rate

Record frame rate will affect the movement of object in recorded video. More frames means more smooth movement and cost more hard disk space.

For **PAL** system, default value is ***25*** fps, that means system will record 25 frames per second. User can set frame rate as ***25,12,8,6,4,3,2,1*** frames per second.

For **NTSC** system, default value is ***30*** fps, that means system will record 30 frames per second. User can set frame rate as ***30,15,10,7,5,4,2*** frames per second.

5.6 Record Quality

There are three level of record quality, **High, Normal** and **Low.** Higher quality cost more hard disk space.

Record frame rate, record quality and hard disk space will affect total record time of DVR system.

5.7 Record Schedule

User can setup video record method by time or Motion triggered.

Note: To start motion record or sensor record, make sure the period that you intend to record is "A" in the "record schedule" menu.

"-" No Record.

"T" Continue record (default).

"A" Motion Triggered record.

Press「Up」「Down」to move the cursor, 「Sel」 to select and "Menu" to confirm and exit.

5.8 Sub Menu - Auto Record

When you choose "***ON***", DVR will be active to record automatically if DVR has not been operated in five minutes.

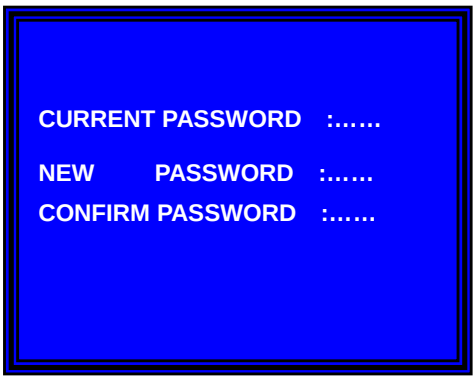
When you choose "***OFF***", DVR will not record until you press "***REC***" button.

5.9 Sub Menu - Password Setup

When password setup is "***ON***", stop recording or enter menu will need password. If password setup is "***OFF***", all passwords will be cancelled.

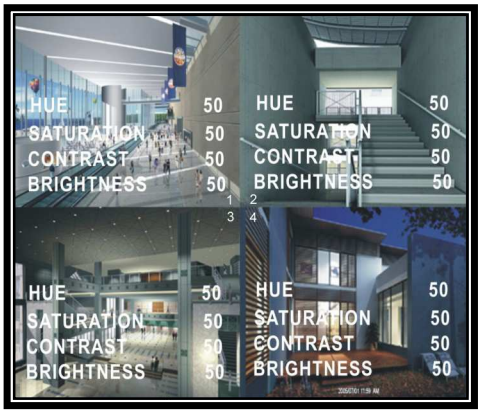
5.10 Sub Menu - Password Change

System default password: press six times "***CH1***" button



All keys can be used as password key except "Menu" key, which is used for confirm and exit.

5.11 Sub Menu - Picture Setup



HUE: 0-99

SATURATION: 0-99

CONTRAST: 0-99

BRIGHTNESS: 0-99

Button function:

「Up」「Down」: to move the cusor

「**STOP**」: reduce Value

「**REC**」: increase Value

「**CH1-CH4,QUAD**」: select channel

「Menu」: save and exit.

5.12 Sub Menu - Time Setup

Press「 Up」and「Down」to move the cursor and press「 Sel」to modify.

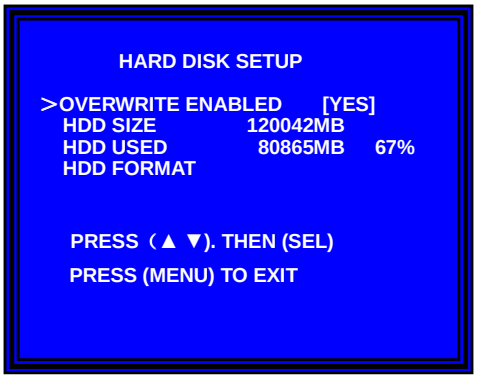
Press「Menu」to save and exit.

5.13 Sub Menu – Language Setup

Press「 Up」and「Down」to move the cursor and press「 Sel」to modify.

Press「Menu」to save and exit.

5.14 Hard Disk Setup



OVERWRITE ENABLED :

If you choose YES, recording continues and overwrite previous recording when hard disk space is full.

If you choose NO, the recording session stops when all hard disk space is full for recording.

HDD SIZE:

It shows the size of the primary hard disk drive installed in the DVR.

HDD USED :

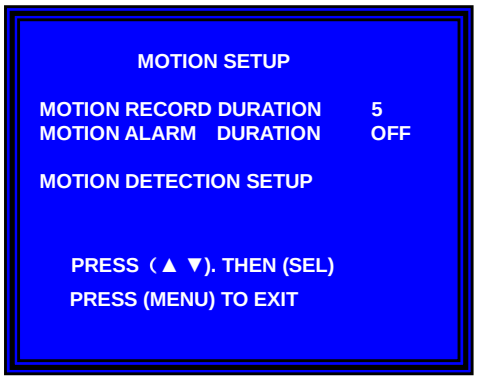
It shows the space used on the first hard disk drive for recording and the percent of the used hard disk.

HDD FORMAT :

NOTE: If you format the hard disk, it will erase all the data recorded!.

When you use the HDD for the first time in the DVR, please use this function to format the HDD. Otherwise the computer will not find the HDD when you connect the DVR to the computer by using the USB cable.

5.15 Motion Setup



MOTION RECORD DURATION :

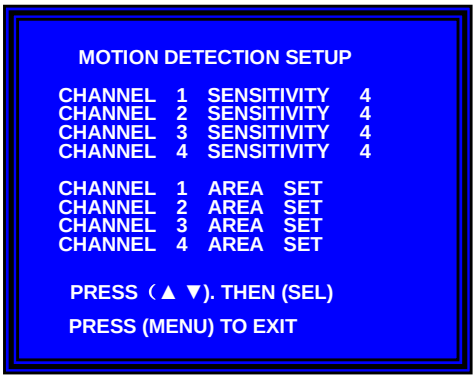
The value indicates how many seconds motioned recording after the lasts movements in front of the camera.

MOTION ALARM DURATION :

The value indicates how many seconds motioned display on the screen “ **MOTION** ”

MOTION DETECTION SETUP:

First step: user need setup video record method by Motion Triggered (A). Please make reference to paragraph 5.7.


MOTION DETECTION SETUP
CHANNEL 1 SENSITIVITY 4
CHANNEL 2 SENSITIVITY 4
CHANNEL 3 SENSITIVITY 4
CHANNEL 4 SENSITIVITY 4
CHANNEL 1 AREA SET
CHANNEL 2 AREA SET
CHANNEL 3 AREA SET
CHANNEL 4 AREA SET
PRESS (▲ ▼). THEN (SEL)
PRESS (MENU) TO EXIT

CHANNEL 1→ 4 - SENSITIVITY :

User can press "↵ Sel" to adjust sensitivity grade of Motion Detection.

High (1----------9,OFF) Low

When it's OFF, the channel can not be triggered by movement.

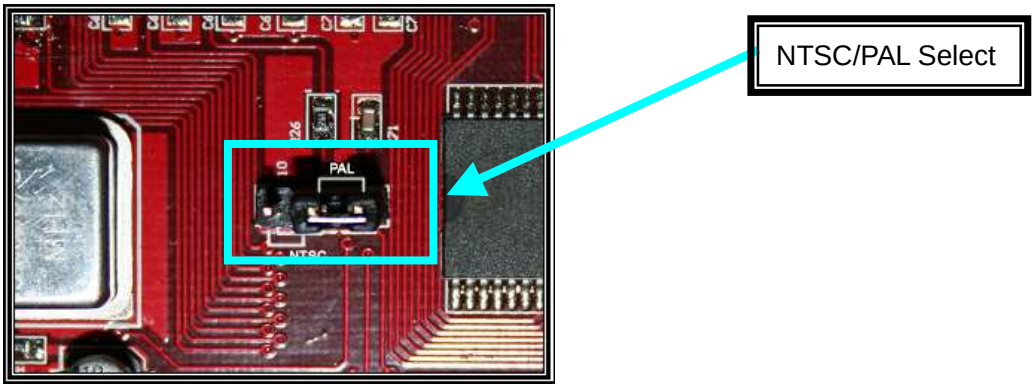
CHANNEL 1→ 4 - AREA SET :

Press "↵ Sel" to enter area setting state, the picture of selected channel is divided into 144 (12*12) blocks, press "***REW***" to move left, press "***FWD***" to move right, press "***UP***" to move up, press "***DOWN***" to move down, press "↵ ***Sel***" to set if the block is active or not. When the block is transparent it's active to record; when the block is covered by shadow, it can not be recorded.

After completed the "MOTION DETECTION SETUP", press「Menu」to exit, and press [● Rec] to start Motion Record.

5.16 NTSC/PAL Output Selection

Move jumper JS1 to select NTSC or PAL (default) video output format according to the silkscreen on the PCB.



5.17 Restore Factory Default

Press "***EDIT***" button to make the system load factory default.

6. Record

6.1 Start Recording

Press "● ***Rec*** " to start recording. System will display some information on screen.

Only EACH MODE can enlarge single channel to full screen display

1 Hard Disk usage ratio.

2 ●Recording Symbol.

3 Channel names.

4 Mode (QUAD or EACH).

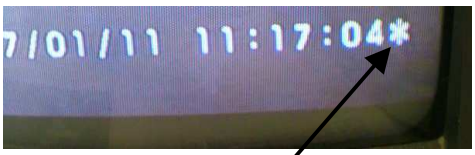
5 Status (REC, Play, FF1, FF2, FF3, REW, PAUSE).

6 HDD information ([M] = Master).

7 Record schedule : (T) Continuous, (A) Motion, (—) no record, (F) Forced

8 DVR time and date.

Note:



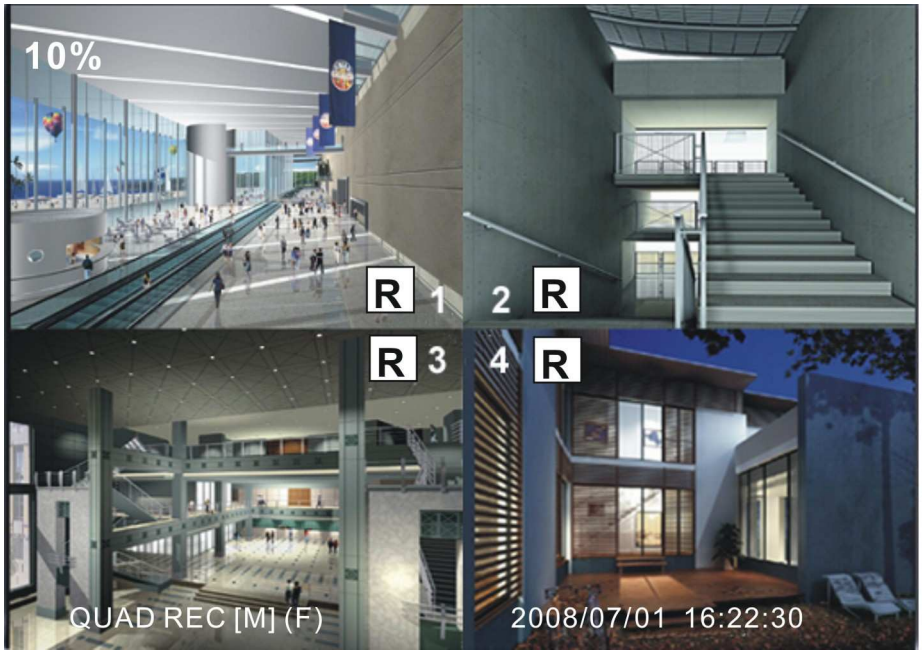
While the data of HDD has been overwrite, there will be a star sign at the end of the Date/Time.

6.2 Stop Recording

Press “■ Stop”, and if “password setup” is **ON**, system will prompt to input password. Only correct password can stop recording process.

6.3 Forced Record mode

When the time correspond to the record schedule is “-”, please press and then hold the “REC” button over 3 seconds to enter the DVR in forced record mode. If you want to exit the forced record mode, please press the “Stop” button once, then you can return to the record mode that is according to the record schedule.



6.4 Recording Length

Estimate record time base on 120G Byte HD (Quad Mode). Unit : Hour

Format	Quality ↓	Frame Rate (Y) →	25	12	6	1
PAL	HIGH →	(X= 20 kB/frame)	70	146	291	1748
	NORMAL →	(X= 15 kB/frame)	93	194	388	2330
	LOW →	(X= 12 kB/frame)	117	243	485	2913

Format	Quality ↓	Frame Rate (Y) →	30	15	7	1
NTSC	HIGH →	(X= 20 kB/frame)	58	117	251	1748
	NORMAL →	(X= 15 kB/frame)	78	155	333	2330
	LOW →	(X= 12 kB/frame)	97	194	416	2913

User can calculate an estimate record hours by below formula:

$$\frac{\text{HDD capacity (G Byte) x 1024 (M Byte) x 1024 (K Byte)}}{\text{X (K Byte/frame) x Y (frame/sec.) x 60 (sec.) x 60 (min.)}}$$

For example (PAL):

HDD 120G Byte @ 6 frames per second @ Normal quality

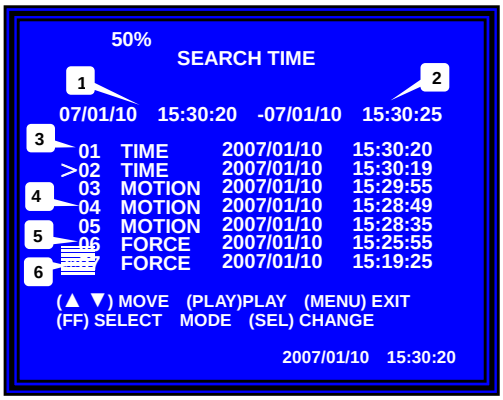
$$\frac{\text{120 (G Byte) x 1024 (M Byte) x 1024 (K Byte)}}{\text{15 (K Byte/frame) x 6 (frame/sec.) x 60 (sec.) x 60 (min.)}}$$

estimate hours are 388

7. Playback

Press " ▶ Play" then system will playback the last data that hasn't been playback. If at this point we press「 Menu」button, the system will show the list of all recorded video clip (newest video will be at top of the list). Press " ▲ Up" and " ▼ Down" to choose the video clip interested and press " ▶ Play" to start play video.

The HDD can be store 191 pieces of events in it at most. Press the button [CH2] to page up, and press the button [CH3] to page down.



1. Start Time

2. End Time

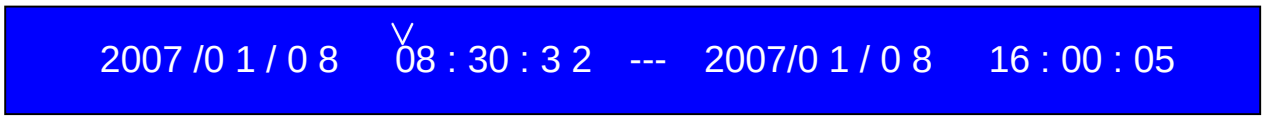
3. TIME: Continue record

4. MOTION : Motion Triggered record

5. FORCE: Forced record

6. ▪: the data haven't been playback

Another way to search video is directly input time period. Press " ▶▶ Forward" and then press " ▲ Up" and " ▼ Down" to move the cursor. Press " ↵ Sel" to edit time value and press " ▶ Play" to play video.



8. USB Programming

User can install the USB programming on the operating system as follows:

Windows 2000/Windows XP/Vista.

For **Vista:**

1. User must log on the operating system as **Administrator**.
2. **2.** Click "**Start**" → "**Control Panel**" → "**User Accounts**" → "**Change User Accounts**", click <**open or close** "**User an Account Control**"> and then forbid **UAC** of the current user.

8.1 Installation

1. Put the USB Driver Program CD in your computer
2. Go for installing by SETUP
3. Set up the install directory
4. For execute: click on **start → Programs → Dvr Viewer**

8.2 Program Interface

Connect the USB cable to PC (System will detect the HDD automatically). Run the program (Double click on the icon “ ” on desktop or see point 4 at paragraph 8.1).

***NOTE: if the HDD can’t be detected because of unsuitable operation, please obviate the fault according to the following steps:**

(1) close the program and remove the USB cable
(2) control if the hard disk is set as MASTER
(3) press [Play] three times, then connect the USB cable to PC and try again

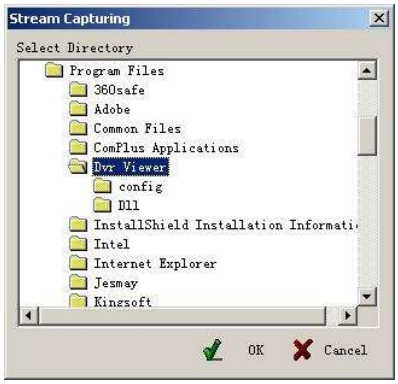
8.3 Button function

1 Save Frame	2 Save Video Clip
3 Configuration	4 Printer
5 Event List	6 DVR/PC mode
7 Channel 2	8 Channel 1
9 Quad mode	10 Channel 3
11 Channel 4	12 Fast backward
13 Backward one frame	14 Backward play
15 Pause	16 Play
17 Next one frame	18 Fast forward
19 Minimize the window	20 Close the window
21 Volume scroll bar	22 Audio ON/OFF
23 Playing Scroll Bar	

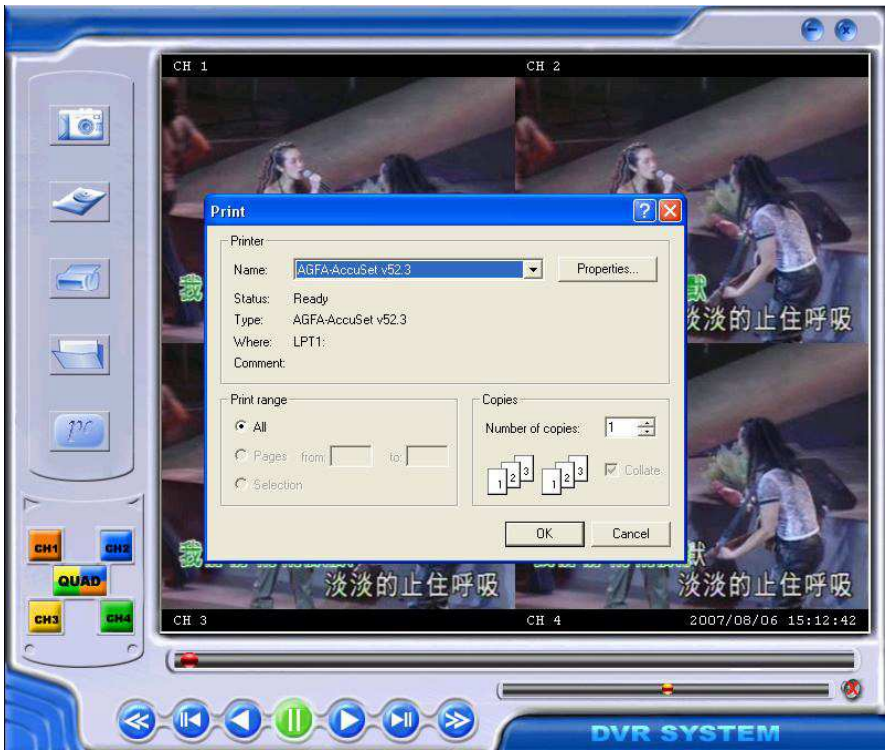
Press to open [JPG/BMP Capture] and select file type. Find the position you want to capture, make sure that the viewer is in PAUSE mode.

During playing the video in the list, in PAUSE mode you can press [Save Video Clip] to save video to PC in MYS or AVI format.

Press to configure the path of storage for capturing video record or video picture. Click "Change" to change the path.

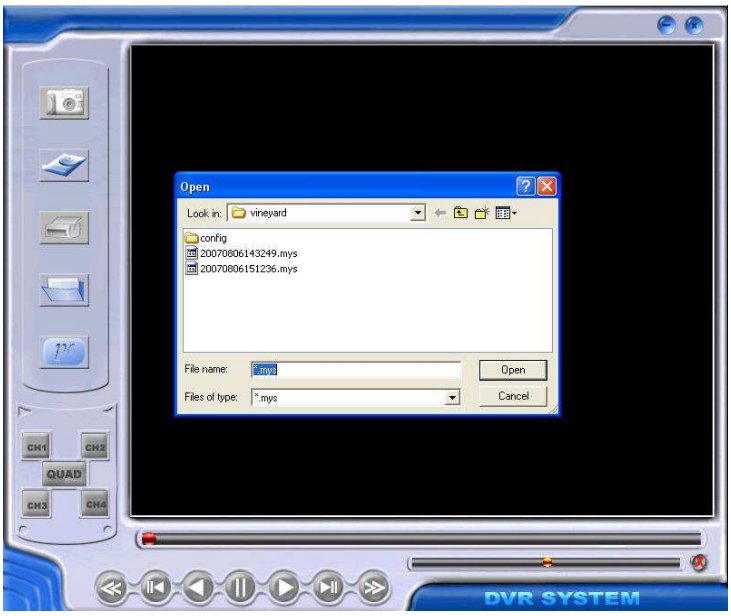


Press to print the picture of DVR's playback.



Press to open the event/record video list. The device can store 191 pieces of events at most.

Press **to change to the PC mode. Then Press** **to open the video in MYS format for playing back.**



Press **to play the video .**

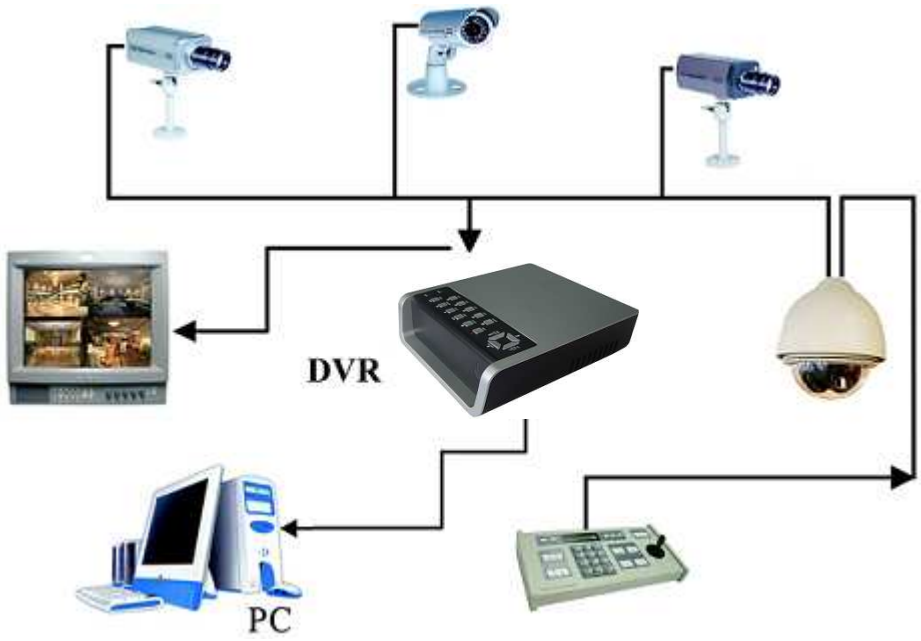
Press the key [F1] on the keyboard to look over the version of current software.

9. Specifications

ITEM		DESCRIPTION	NOTE
Video Format		NTSC / PAL	
Operation System		None	STAND-ALONE
Camera Input Channel		4 – BNC composite video channel	
Video Output Channel		1- BNC composite video channel	
Display Frame Rate	NTSC	120 frames/second	4 x 30 frames/second
	PAL	100 frames /second	4 x 25 frames/second
Recording Frame Rate (Quad)	NTSC	Max 30 fps	Quad Mode
	PAL	Max.25 fps	Quad Mode
Recording Frame Rate (Each Mode)	NTSC	Each Channel = 30 ÷ Number of Sources	Max. 30 frames/s (Each Channel)
	PAL	Each Channel = 25 fps ÷ Number of Sources	Max. 25 frames/s (Each Channel)
Record Mode		Continuous, Time Schedule, Motion Triggered.	
Resolution	Display	NTSC：720 x 480 PAL ：720 x 576	
	Record	NTSC：320 x 112; 640 x 224 PAL ：320 x 136; 640 x 272	Quad ：640 x 224 (total) Each ：640 x 224
Video Compression Format (Each Channel)		Modified Motion-JPEG (12-20K bytes/frame)	Low : 12 KB/frame Normal : 15 KB/frame High : 20 KB/frame
HDD Support (2.5 inch)		over 80G Byte	ATA -100 Interface
USB		YES	USB2.0 Port for playback
Example of estimated Record Length		120G Hard disk @ 6 frame per second @ Normal Quality (120*1024*1024 K byte) ÷ (6*15*60*60) = 388 Hours	
Search	Method	Time, Date, Event	
	Full Screen	YES	
Dimension (D x W x H)		175 x 200 x 50 mm	
Power supply		100~240V AC / 12 V DC @ 3A (adapter supplying)	

10. Appendix

10.1 Connection example



10.2 Accessories in equipment

- Power adapter
- USB cable with driver CD
- Remote control
- User manual

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